UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

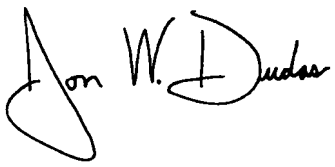
PATENT NO. : 7,060,281 B1
APPLICATION NO. : 09/596746
DATED : June 13, 2006
INVENTOR(S) : Raymond J. Dattwyler et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 45, Insert SEQ ID NOS. 53-86 after SEQ ID NO: 52 as attached.

Signed and Sealed this

Sixteenth Day of October, 2007



JON W. DUDAS
Director of the United States Patent and Trademark Office

<210> 53

<211> 1137
<212> DNA
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<221> CDS
<222> (1)...(1137)

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gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa aaa   96
Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys
            20                  25                  30

att acg gat tct aat gcg gtt tta ctt gct gtg aaa gag gtt gaa gcg   144
Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala
        35                  40                  45

ttg ctg tca tct ata gat gag ctt gct aaa gct att ggt aaa aaa ata   192
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 65                  70                  75                  80

tta gca gga gct tat aca ata tca acc tta ata aca caa aaa tta agt   288
Leu Ala Gly Ala Tyr Thr Ile Ser Thr Leu Ile Thr Gln Lys Leu Ser
                85                  90                  95

aaa tta aac gga tcu gaa ggt tta aag gaa aag att gcc gca gct aag   336
Lys Leu Asn Gly Ser Glu Gly Leu Lys Glu Lys Ile Ala Ala Ala Lys
            100                 105                 110

aaa tgc tct gaa gay ttt agt act aaa cta aaa gat aat cat gca cag   384
Lys Cys Ser Glu Glu Phe Ser Thr Lys Leu Lys Asp Asn His Ala Gln
        115                 120                 125

ctt ggt ata cag ggc gtt act gat gaa aat gca aaa aaa gct att tta   432
Leu Gly Ile Gln Gly Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu
    130                 135                 140

aaa gca aat gca gcg ggt aaa gat aag ggc gtt gaa gaa ctt gaa aag   480
Lys Ala Asn Ala Ala Gly Lys Asp Lys Gly Val Glu Glu Leu Glu Lys
145                 150                 155                 160

ttg tcc gga tca ttu gaa agc tta tca aaa gca gct aaa gag atg ctt   528
Leu Ser Gly Ser Leu Glu Ser Leu Ser Lys Ala Ala Lys Glu Met Leu
                165                 170                 175

gct aat tca gtt aaa gag ctt aca agc cct gtt gtc cat ggt aat aat   576
Ala Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val His Gly Asn Asn
            180                 185                 190

tca ggt ggg gat tct gca tct act aat cct gat gag tct gca aaa gga   624
Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly
        195                 200                 205

cct aat ctt acc gta ata agc aaa aaa att aca gat tct aat gca ttt   672
Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe
    210                 215                 220

tta ctg gct gtg aaa gaa gtt gag gct ttg ctt tca tct ata gat gaa   720
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225                 230                 235                 240
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ctt tct aaa gct att ggt aaa aaa ata aaa aat gat ggt act tta gat   768
Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp
                245                 250                 255

aac gaa gca aat cga aac gaa tca ttg ata gca gga gct tat gaa ata   816
Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile
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tca aaa cta ata aca caa aaa tta agt gta ttg aat tca gaa gaa tta   864
Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu
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aag aaa aaa att aaa gag gct aag gat tgt tcc caa aaa ttt act act   912
Lys Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr
    290                 295                 300

aag cta aaa gat agt cat gca gag ctt ggt ata caa agc gtt cag gat   960
Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp
305                 310                 315                 320

gat aat gca aaa aaa gct att tta aaa aca cat gga act aaa gac aag   1008
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                325                 330                 335

ggt gct aaa gaa ctt gaa gag tta ttt aaa tca cta gaa agc ttg tca   1056
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aaa gca gcg caa gca gca tta act aat tca gtt aaa gag ctt aca aat   1104
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cct gtt gtg gca gaa agt cca aaa aaa cct taa                      1137
Pro Val Val Ala Glu Ser Pro Lys Lys Pro  *
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Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala
        35                  40                  45
Leu Leu Ser Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile
    50                  55                  60
Lys Asn Asp Gly Ser Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu
65                  70                  75                  80
Leu Ala Gly Ala Tyr Thr Ile Ser Thr Leu Ile Thr Gln Lys Leu Ser
                85                  90                  95
Lys Leu Asn Gly Ser Glu Gly Leu Lys Glu Lys Ile Ala Ala Ala Lys
            100                 105                 110
Lys Cys Ser Glu Glu Phe Ser Thr Lys Leu Lys Asp Asn His Ala Gln
        115                 120                 125
Leu Gly Ile Gln Gly Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu
    130                 135                 140
Lys Ala Asn Ala Ala Gly Lys Asp Lys Gly Val Glu Glu Leu Glu Lys
145                 150                 155                 160
Leu Ser Gly Ser Leu Glu Ser Leu Ser Lys Ala Ala Lys Glu Met Leu
                165                 170                 175
Ala Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val His Gly Asn Asn
            180                 185                 190
Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly
        195                 200                 205
Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe
    210                 215                 220
Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu
225                 230                 235                 240
Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp
                245                 250                 255
Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile
            260                 265                 270
Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu
        275                 280                 285
Lys Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr
    290                 295                 300
Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp
305                 310                 315                 320
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Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp Lys
                325                 330                 335
Gly Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu Ser
            340                 345                 350
Lys Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr Asn
        355                 360                 365
Pro Val Val Ala Glu Ser Pro Lys Lys Pro
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 1               5                  10                  15

gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa aaa   96
Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys
             20                  25                  30

att acg gat tct aat gcg gtt tta ctt gct gtg aaa gag gtt gaa gcg   144
Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala
         35                  40                  45

ttg ctg tca tct ata gat gaa att gct gct aaa gct att ggt aaa aaa   192
Leu Leu Ser Ser Ile Asp Glu Ile Ala Ala Lys Ala Ile Gly Lys Lys
     50                  55                  60

ata cac caa aat aat ggt ttg gat acc gaa tat aat cac aat gga tca   240
Ile His Gln Asn Asn Gly Leu Asp Thr Glu Tyr Asn His Asn Gly Ser
 65                  70                  75                  80

ttg tta gcg gga gct tat gca ata tca acc cta ata aaa caa aaa tta   288
Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Lys Gln Lys Leu
                 85                  90                  95
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gat gga ttg aaa aat gaa gga tta aag gaa aaa att gat gcg gct aag   336
Asp Gly Leu Lys Asn Glu Gly Leu Lys Glu Lys Ile Asp Ala Ala Lys
            100                 105                 110

aaa tgt tct gaa aca ttt act aat aaa tta aaa gaa aaa cac aca gat   384
Lys Cys Ser Glu Thr Phe Thr Asn Lys Leu Lys Glu Lys His Thr Asp
        115                 120                 125

ctt ggt aaa gaa ggt gtt act gat gct gat gca aaa gaa gcc att tta   432
Leu Gly Lys Glu Gly Val Thr Asp Ala Asp Ala Lys Glu Ala Ile Leu
    130                 135                 140

aaa aca aat ggt act aaa act aaa ggt gct gaa gaa ctt gga aaa tta   480
Lys Thr Asn Gly Thr Lys Thr Lys Gly Ala Glu Glu Leu Gly Lys Leu
145                 150                 155                 160

ttt gaa tca gta gag gtc ttg tca aaa gca gct aaa gag atg ctt gct   528
Phe Glu Ser Val Glu Val Leu Ser Lys Ala Ala Lys Glu Met Leu Ala
                165                 170                 175

aat tca gtt aaa gag ctt aca agc cct gtt gtg gca gaa agt cca aaa   576
Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro Lys
            180                 185                 190

aaa cct ttc cat ggt aat aat tca ggt ggg gat tct gca tct act aat   624
Lys Pro Phe His Gly Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn
        195                 200                 205

cct gat gag tct gca aaa gga cct aat ctt acc gta ata agc aaa aaa   672
Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys Lys
    210                 215                 220

att aca gat tct aat gca ttt tta ctg gct gtg aaa gaa gtt gag gct   720
Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu Ala
225                 230                 235                 240

ttg ctt tca tct ata gat gaa ctt tct aaa gct att ggt aaa aaa ata   768
Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile
                245                 250                 255

aaa aat gat ggt act tta gat aac gaa gca aat cga aac gaa tca ttg   816
Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu
            260                 265                 270

ata gca gga gct tat gaa ata tca aaa cta ata aca caa aaa tta agt   864
Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser
        275                 280                 285
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gta ttg aat tca gaa gaa tta aag aaa aaa att aaa gag gct aag gat   912
Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys Asp
    290                 295                 300

tgt tcc caa aaa ttt act act aag cta aaa gat agt cat gca gag ctt   960
Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu Leu
305                 310                 315                 320

ggt ata caa agc gtt cag gat gat aat gca aaa aaa gct att tta aaa   1008
Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys
                325                 330                 335

aca cat gga act aaa gac aag ggt gct aaa gaa ctt gaa gag tta ttt   1056
Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe
            340                 345                 350

aaa tca cta gaa agc ttg tca aaa gca gcg caa gca gca tta act aat   1104
Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn
        355                 360                 365

tca gtt aaa gag ctt aca aat cct gtt gtg gca gaa agt cca aaa aaa   1152
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    370                 375                 380

cct taa                                                         1158
Pro  *
385
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            20                  25                  30
Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala
        35                  40                  45

Leu Leu Ser Ser Ile Asp Glu Ile Ala Ala Lys Ala Ile Gly Lys Lys
    50                  55                  60
Ile His Gln Asn Asn Gly Leu Asp Thr Glu Tyr Asn His Asn Gly Ser
65                  70                  75                  80
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Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Lys Gln Lys Leu
                85                  90                  95
Asp Gly Leu Lys Asn Glu Gly Leu Lys Glu Lys Ile Asp Ala Ala Lys
            100                 105                 110
Lys Cys Ser Glu Thr Phe Thr Asn Lys Leu Lys Glu Lys His Thr Asp
        115                 120                 125
Leu Gly Lys Glu Gly Val Thr Asp Ala Asp Ala Lys Glu Ala Ile Leu
    130                 135                 140
Lys Thr Asn Gly Thr Lys Thr Lys Gly Ala Glu Glu Leu Gly Lys Leu
145                 150                 155                 160
Phe Glu Ser Val Glu Val Leu Ser Lys Ala Ala Lys Glu Met Leu Ala
                165                 170                 175
Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro Lys
            180                 185                 190
Lys Pro Phe His Gly Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn
        195                 200                 205
Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys Lys
    210                 215                 220
Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu Ala
225                 230                 235                 240
Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile
                245                 250                 255
Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu
            260                 265                 270
Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser
        275                 280                 285
Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys Asp
    290                 295                 300
Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu Leu
305                 310                 315                 320
Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys
                325                 330                 335
Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe
            340                 345                 350
Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn
        355                 360                 365
Ser Val Lys Glu Leu Thr Asn Pro Val Val Ala Glu Ser Pro Lys Lys
    370                 375                 380
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Pro
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 1               5                  10                  15

gct gac gag tct gcg aaa ggg cct aat ctt aca gaa ata agc aaa aaa   96
Ala Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys
            20                  25                  30

att aca gat tct aat gca ttt gta ctt gct gtt aaa gaa gtt gag act   144
Ile Thr Asp Ser Asn Ala Phe Val Leu Ala Val Lys Glu Val Glu Thr
        35                  40                  45

ttg gtt tta tct ata gat gaa ctt gct aag aaa gct att ggt caa aaa   192
Leu Val Leu Ser Ile Asp Glu Leu Ala Lys Lys Ala Ile Gly Gln Lys
    50                  55                  60

ata gac aat aat aat ggt tta gct gct tta aat aat cag aat gga tcg   240
Ile Asp Asn Asn Asn Gly Leu Ala Ala Leu Asn Asn Gln Asn Gly Ser
65                  70                  75                  80

ttg tta gca gga gcc tat gca ata tca acc cta ata aca gaa aaa ttg   288
Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Thr Glu Lys Leu
                85                  90                  95

agt aaa ttg aaa aat tta gaa gaa tta aag aca gaa att gca aag gct   336
Ser Lys Leu Lys Asn Leu Glu Glu Leu Lys Thr Glu Ile Ala Lys Ala
            100                 105                 110

aag aaa tgt tcc gaa gaa ttt act aat aaa cta aaa agt ggt cat gca   384
Lys Lys Cys Ser Glu Glu Phe Thr Asn Lys Leu Lys Ser Gly His Ala
        115                 120                 125

gat ctt ggc aaa cag gat gct acc gat gat cat gca aaa gca gct att   432
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Asp Leu Gly Lys Gln Asp Ala Thr Asp Asp His Ala Lys Ala Ala Ile
    130                 135                 140

tta aaa aca cat gca act acc gat aaa ggt gct aaa gaa ttt aaa gat   480
Leu Lys Thr His Ala Thr Thr Asp Lys Gly Ala Lys Glu Phe Lys Asp
145                 150                 155                 160

tta ttt gaa tca gta gaa ggt ttg tta aaa gca gct caa gta gca cta   528
Leu Phe Glu Ser Val Glu Gly Leu Leu Lys Ala Ala Gln Val Ala Leu
                165                 170                 175

act aat tca gtt aaa gaa ctt aca agt cct gtt gta gca gaa agt cca   576
Thr Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro
            180                 185                 190

aaa aaa cct cat atg gct aat aat tca ggt ggg gat tct gca tct act   624
Lys Lys Pro His Met Ala Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr
        195                 200                 205

aat cct gat gag tct gca aaa gga cct aat ctt acc gta ata agc aaa   672
Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys
    210                 215                 220

aaa att aca gat tct aat gca ttt tta ctg gct gtg aaa gaa gtt gag   720
Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu
225                 230                 235                 240

gct ttg ctt tca tct ata gat gaa ctt tct aaa gct att ggt aaa aaa   768
Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys
                245                 250                 255

ata aaa aat gat ggt act tta gat aac gaa gca aat cga aac gaa tca   816
Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser
            260                 265                 270

ttg ata gca gga gct tat gaa ata tca aaa cta ata aca caa aaa tta   864
Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu
        275                 280                 285

agt gta ttg aat tca gaa gaa tta aag aaa aaa att aaa gag gct aag   912
Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys
    290                 295                 300

gat tgt tcc caa aaa ttt act act aag cta aaa gat agt cat gca gag   960
Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu
305                 310                 315                 320
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ctt ggt ata caa agc gtt cag gat gat aat gca aaa aaa gct att tta   1008
Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu
                325                 330                 335

aaa aca cat gga act aaa gac aag ggt gct aaa gaa ctt gaa gag tta   1056
Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu
            340                 345                 350

ttt aaa tca cta gaa agc ttg tca aaa gca gcg caa gca gca tta act   1104
Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr
        355                 360                 365

aat tca gtt aaa gag ctt aca aat cct gtt gtg gca gaa agt cca aaa   1152
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    370                 375                 380

aaa cct taa                                                     1161
Lys Pro  *
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            20                  25                  30
Ile Thr Asp Ser Asn Ala Phe Val Leu Ala Val Lys Glu Val Glu Thr
        35                  40                  45
Leu Val Leu Ser Ile Asp Glu Leu Ala Lys Lys Ala Ile Gly Gln Lys
    50                  55                  60
Ile Asp Asn Asn Asn Gly Leu Ala Ala Leu Asn Asn Gln Asn Gly Ser
65                  70                  75                  80
Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Thr Glu Lys Leu
                85                  90                  95
Ser Lys Leu Lys Asn Leu Glu Glu Leu Lys Thr Glu Ile Ala Lys Ala
            100                 105                 110
Lys Lys Cys Ser Glu Glu Phe Thr Asn Lys Leu Lys Ser Gly His Ala
        115                 120                 125
Asp Leu Gly Lys Gln Asp Ala Thr Asp Asp His Ala Lys Ala Ala Ile
    130                 135                 140
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Leu Lys Thr His Ala Thr Thr Asp Lys Gly Ala Lys Glu Phe Lys Asp
145                 150                 155                 160
Leu Phe Glu Ser Val Glu Gly Leu Leu Lys Ala Ala Gln Val Ala Leu
                165                 170                 175
Thr Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro
            180                 185                 190
Lys Lys Pro His Met Ala Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr
        195                 200                 205
Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys
    210                 215                 220
Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu
225                 230                 235                 240
Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys
                245                 250                 255
Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser
            260                 265                 270
Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu
        275                 280                 285
Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys
    290                 295                 300
Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu
305                 310                 315                 320
Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu
                325                 330                 335
Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu
            340                 345                 350
Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr
        355                 360                 365
Asn Ser Val Lys Glu Leu Thr Asn Pro Val Val Ala Glu Ser Pro Lys
    370                 375                 380
Lys Pro
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 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat   288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata   336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110

tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta   384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat   432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140

aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat   480
```

```
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160

gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa   528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175

ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca   576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190

aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc   624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205

cct gtt gtg gca gaa agt cca gcc atg gta aat aat tca ggg aaa gat   672
Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp
    210                 215                 220

ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct aat   720
Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn
225                 230                 235                 240

ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt ctc   768
Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu
                245                 250                 255

gcc gtg aaa gaa gtt gaa act ttg ctt aca tct ata gat gag ctt gct   816
Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala
            260                 265                 270

aaa gct att ggt aaa aaa ata aaa aac gat gtt agt tta gat aat gag   864
Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu
        275                 280                 285

gca gat cac aac gga tca tta ata tca gga gca tat tta att tca aac   912
Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn
    290                 295                 300

tta ata aca aaa aaa ata agt gca ata aaa gat tca gga gaa ttg aag   960
Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys
305                 310                 315                 320

gca gaa att gaa aag gct aag aaa tgt tct gaa gaa ttt act gct aaa  1008
Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys
                325                 330                 335
```

```
tta aaa ggt gaa cac aca gat ctt ggt aaa gaa ggc gtt act gat gat   1056
Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp
            340                 345                 350

aat gca aaa aaa gcc att tta aaa aca aat aat gat aaa act aag ggc   1104
Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly
        355                 360                 365

gct gat gaa ctt gaa aag tta ttt gaa tca gta aaa aac ttg tca aaa   1152
Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys
    370                 375                 380

gca gct aaa gag atg ctt act aat tca gtt aaa gag ctt aca agc       1197
Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser
385                 390                 395


<210> 60
<211> 399
<212> PRT
<213> ospC Chimera

<400> 60
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190
```

```
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205
Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp
    210                 215                 220
Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn
225                 230                 235                 240

Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu
                245                 250                 255
Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala
            260                 265                 270
Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu
        275                 280                 285
Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn
    290                 295                 300
Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys
305                 310                 315                 320
Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys
                325                 330                 335
Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp
            340                 345                 350
Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly
        355                 360                 365
Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys
    370                 375                 380
Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser
385                 390                 395


<210> 61
<211> 1196
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1196)

<400> 61
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
             20                  25                  30
```

```
gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
         35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
     50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
 65                  70                  75                  80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat   288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                 85                  90                  95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata   336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110

tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta   384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat   432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140

aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat   480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160

gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa   528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175

ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca   576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190

aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc   624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205

cct gtt gtg gca gaa agt cca gcc atg gta aat aat tca gga aaa gat   672
Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp
    210                 215                 220
```

```
ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct aat   720
Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn
225                 230                 235                 240

ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt ctg   768
Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu
                245                 250                 255

gct gtg aaa gaa att gaa act ttg ctt gca tct ata gat gaa ctt gct   816
Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala
            260                 265                 270

act aaa gct att ggt aaa aaa ata caa caa aat ggt ggt tta gct gtc   864
Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val
        275                 280                 285

gaa gcg ggg cat aat gga aca ttg tta gca ggt gct tat aca ata tca   912
Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser
    290                 295                 300

aaa cta ata aca caa aaa tta gat gga ttg aaa aat tca gaa aaa tta   960
Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu
305                 310                 315                 320

aag gaa aaa att gaa aat gct aag aaa tgt tct gaa gat ttt act aaa   1008
Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys
                325                 330                 335

aaa cta gaa gga gaa cat gcg caa ctt gga att gaa aat gtt act gat   1056
Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp
            340                 345                 350

gag aat gca aaa aaa gct att tta ata aca gat gca gct aaa gat aag   1104
Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys
        355                 360                 365

ggc gct gca gag ctt gaa aag cta ttt aaa gca gta gaa aac ttg gca   1152
Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala
    370                 375                 380

aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt ac        1196
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu
385                 390                 395
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<210> 62
<211> 398
<212> PRT
<213> ospC Chimera

<400> 62
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
1 5 10 15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
20 25 30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
35 40 45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
50 55 60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65 70 75 80
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
85 90 95
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
100 105 110
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
115 120 125
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
130 135 140
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145 150 155 160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
165 170 175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
180 185 190
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
195 200 205
Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp
210 215 220
Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn
225 230 235 240
Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu
245 250 255
Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala
260 265 270
Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val
275 280 285
Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser
290 295 300
Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu
305 310 315 320

```
Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys
                325                 330                 335

Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp
            340                 345                 350
Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys
        355                 360                 365
Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala
    370                 375                 380
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu
385                 390                 395


<210> 63
<211> 1185
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1185)

<400> 63
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat   288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95
```

```
gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca   336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110

acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta   384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125

aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act   432
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140

aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat   480
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160


gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat   528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175

aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta   576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190

tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca   624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205

agc cct gtt gtc cat ggt aat aat tca ggg aaa gat ggg aat aca tct   672
Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser
    210                 215                 220

gca aat tct gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata   720
Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
225                 230                 235                 240

agt aaa aaa att aca gaa tct aac gca gtt gtt ctc gcc gtg aaa gaa   768
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
                245                 250                 255

gtt gaa act ttg ctt aca tct ata gat gag ctt gct aaa gct att ggt   816
Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly
            260                 265                 270

aaa aaa ata aaa aac gat gtt agt tta gat aat gag gca gat cac aac   864
```

```
Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn
        275                 280                 285

gga tca tta ata tca gga gca tat tta att tca aac tta ata aca aaa   912
Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys
    290                 295                 300

aaa ata agt gca ata aaa gat tca gga gaa ttg aag gca gaa att gaa   960
Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu
305                 310                 315                 320

aag gct aag aaa tgt tct gaa gaa ttt act gct aaa tta aaa ggt gaa   1008
Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu
                325                 330                 335

cac aca gat ctt ggt aaa gaa ggc gtt act gat gat aat gca aaa aaa   1056
His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys
            340                 345                 350

gcc att tta aaa aca aat aat gat aaa act aag ggc gct gat gaa ctt   1104
Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu
        355                 360                 365

gaa aag tta ttt gaa tca gta aaa aac ttg tca aaa gca gct aaa gag   1152
Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu
    370                 375                 380

atg ctt act aat tca gtt aaa gag ctt aca agc                      1185
Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser
385                 390                 395
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<210> 64
<211> 395
<212> PRT
<213> ospC Chimera

<400> 64

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
```

```
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205
Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser
    210                 215                 220
Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
225                 230                 235                 240
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
                245                 250                 255
Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly
            260                 265                 270
Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn
        275                 280                 285
Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys
    290                 295                 300
Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu
305                 310                 315                 320
Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu
                325                 330                 335
His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys
            340                 345                 350
Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu
        355                 360                 365
Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu
    370                 375                 380
Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser
385                 390                 395
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<210> 65
<211> 1184
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1184)

<400> 65

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atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat   288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95

gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca   336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110

acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta   384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125

aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act   432
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140

aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat   480
```

```
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160

gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat   528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175

aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta   576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190

tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca   624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205

agc cct gtt gtc cat ggt aat aat tca gga aaa gat ggg aat aca tct   672
Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser
    210                 215                 220

gca aat tct gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata   720
Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
225                 230                 235                 240

agt aaa aaa att aca gaa tct aac gca gtt gtt ctg gct gtg aaa gaa   768
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
                245                 250                 255

att gaa act ttg ctt gca tct ata gat gaa ctt gct act aaa gct att   816
Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile
            260                 265                 270

ggt aaa aaa ata caa caa aat ggt ggt tta gct gtc gaa gcg ggg cat   864
Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His
        275                 280                 285

aat gga aca ttg tta gca ggt gct tat aca ata tca aaa cta ata aca   912
Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr
    290                 295                 300

caa aaa tta gat gga ttg aaa aat tca gaa aaa tta aag gaa aaa att   960
Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile
305                 310                 315                 320

gaa aat gct aag aaa tgt tct gaa gat ttt act aaa aaa cta gaa gga  1008
Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly
                325                 330                 335
```

```
gaa cat gcg caa ctt gga att gaa aat gtt act gat gag aat gca aaa   1056
Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys
            340                 345                 350

aaa gct att tta ata aca gat gca gct aaa gat aag ggc gct gca gag   1104
Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu
        355                 360                 365

ctt gaa aag cta ttt aaa gca gta gaa aac ttg gca aaa gca gct aaa   1152
Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys
    370                 375                 380

gag atg ctt gct aat tca gtt aaa gag ctt ac                       1184
Glu Met Leu Ala Asn Ser Val Lys Glu Leu
385                 390
```

<210> 66
<211> 394
<212> PRT
<213> ospC Chimera

<400> 66

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175
```

```
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205
Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser
    210                 215                 220
Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
225                 230                 235                 240
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
                245                 250                 255
Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile
            260                 265                 270
Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His
        275                 280                 285
Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr
    290                 295                 300
Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile
305                 310                 315                 320
Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly
                325                 330                 335
Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys
            340                 345                 350
Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu
        355                 360                 365
Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys
    370                 375                 380
Glu Met Leu Ala Asn Ser Val Lys Glu Leu
385                 390
```

<210> 67
<211> 1184
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1184)

<400> 67

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atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
```

```
gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
         35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
     50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
 65                  70                  75                  80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat   288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                 85                  90                  95

gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca   336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110

acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta   384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125

aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act   432
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140

aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat   480
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160

gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat   528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175

aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta   576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190

tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca   624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205
```

```
agc cct gtt gtc cat ggt aat aat tca aga aaa gat ggg aat gca tct   672
Ser Pro Val Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser
    210                 215                 220

aca aat tct gcc gat gag tct gtt aaa ggg cct aat ctt aca gaa ata   720
Thr Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
225                 230                 235                 240

agt aaa aaa att aca gaa tct aac gca gtt gtt ctg gcc gtg aaa gaa   768
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
                245                 250                 255

gtt gag acc tta ctt gca tct ata gat gaa ctt gct acc aaa gct att   816
Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile
            260                 265                 270

ggt aag aaa ata ggc aat aat ggt tta gag gcc aat cag agt aaa aac   864
Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn
        275                 280                 285

aca tca ttg tta tca gga gct tat gca ata tct gac cta ata gca gaa   912
Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu
    290                 295                 300

aaa tta aat gta ttg aaa aat gaa gaa tta aag gaa aag att gat aca   960
Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr
305                 310                 315                 320

gct aag caa tgt tct aca gaa ttt act aat aaa cta aaa agt gaa cat  1008
Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His
                325                 330                 335

gca gtg ctt ggt ctg gac aat ctt act gat gat aat gca caa aga gct  1056
Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala
            340                 345                 350

att tta aaa aaa cat gca aat aaa gat aag ggt gct gca gaa ctt gaa  1104
Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu
        355                 360                 365

aag tta ttt aaa gcg gta gaa aac tta tca aaa gca gct caa gac aca  1152
Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr
    370                 375                 380

tta aaa aat gct gtt aaa gag ctt aca agt oc                      1184
Leu Lys Asn Ala Val Lys Glu Leu Thr Ser
385                 390
```

<210> 68
<211> 394
<212> PRT
<213> ospC Chimera

<400> 68

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140

Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205
Ser Pro Val Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser
    210                 215                 220
Thr Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
225                 230                 235                 240
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
                245                 250                 255
Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile
            260                 265                 270
Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn
        275                 280                 285
Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu
    290                 295                 300
```

```
Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr
305                 310                 315                 320
Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His
                325                 330                 335
Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala
            340                 345                 350
Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu
        355                 360                 365
Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr
    370                 375                 380
Leu Lys Asn Ala Val Lys Glu Leu Thr Ser
385                 390


<210> 69
<211> 1209
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1209)

<400> 69
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat   288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95
```

```
gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca   336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110

acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta   384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125

aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act   432
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140

aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat   480
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160

gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat   528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175

aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta   576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190

tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca   624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205

agc cct gtt gtc cat ggt aat aat tca ggt ggg gat tct gca tct act   672
Ser Pro Val Val His Gly Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr
    210                 215                 220

aat cct gat gag tct gca aaa gga cct aat ctt acc gta ata agc aaa   720
Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys
225                 230                 235                 240

aaa att aca gat tct aat gca ttt tta ctg gct gtg aaa gaa gtt gag   768
Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu
                245                 250                 255

gct ttg ctt tca tct ata gat gaa ctt tct aaa gct att ggt aaa aaa   816
Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys
            260                 265                 270
```

```
ata aaa aat gat ggt act tta gat aac gaa gca aat cga aac gaa tca   864
Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser
        275                 280                 285

ttg ata gca gga gct tat gaa ata tca aaa cta ata aca caa aaa tta   912
Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu
    290                 295                 300

agt gta ttg aat tca gaa gaa tta aag aaa aaa att aaa gag gct aag   960
Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys
305                 310                 315                 320

gat tgt tcc caa aaa ttt act act aag cta aaa gat agt cat gca gag   1008
Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu
                325                 330                 335

ctt ggt ata caa agc gtt cag gat gat aat gca aaa aaa gct att tta   1056
Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu
            340                 345                 350

aaa aca cat gga act aaa gac aag ggt gct aaa gaa ctt gaa gag tta   1104
Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu
        355                 360                 365

ttt aaa tca cta gaa agc ttg tca aaa gca gcg caa gca gca tta act   1152
Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr
    370                 375                 380

aat tca gtt aaa gag ctt aca aat cct gtt gtg gca gaa agt cca aaa   1200
Asn Ser Val Lys Glu Leu Thr Asn Pro Val Val Ala Glu Ser Pro Lys
385                 390                 395                 400

aaa cct taa                                                     1209
Lys Pro  *
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<210> 70
<211> 402
<212> PRT
<213> ospC Chimera

<400> 70

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
```

```
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
65                  70                  75                  80
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                  90                  95
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
            100                 105                 110
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
    130                 135                 140
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
145                 150                 155                 160
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
                165                 170                 175
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
            180                 185                 190
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
        195                 200                 205
Ser Pro Val Val His Gly Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr
    210                 215                 220
Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys
225                 230                 235                 240
Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu
                245                 250                 255
Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys
            260                 265                 270
Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser
        275                 280                 285
Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu
    290                 295                 300
Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys
305                 310                 315                 320
Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu
                325                 330                 335
Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu
            340                 345                 350
Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu
        355                 360                 365
Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr
    370                 375                 380
Asn Ser Val Lys Glu Leu Thr Asn Pro Val Val Ala Glu Ser Pro Lys
385                 390                 395                 400
Lys Pro
```

<210> 71
<211> 1179
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1179)

<400> 71

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atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca gga aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat gca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50                  55                  60

ctg gcc gtg aaa gaa gtt gag acc tta ctt gca tct ata gat gaa ctt   240
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
65                  70                  75                  80

gct acc aaa gct att ggt aaa aaa ata ggc aat aat ggt tta gag gcc   288
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
                85                  90                  95

aat cag agt aaa aac aca tca ttg tta tca gga gct tat gca ata tct   336
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
            100                 105                 110
gac cta ata gca gaa aaa tta aat gta ttg aaa aat gaa gaa tta aag   384
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
        115                 120                 125

gaa aag att gat aca gct aag caa tgt tct aca gaa ttt act aat aaa   432
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130                 135                 140
```

```
cta aaa agt gaa cat gca gtg ctt ggt ctg gac aat ctt act gat gat   480
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
145                 150                 155                 160

aat gca caa aga gct att tta aaa aaa cat gca aat aaa gat aag ggt   528
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
                165                 170                 175

gct gca gaa ctt gaa aag tta ttt aaa gcg gta gaa aac tta tca aaa   576
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
            180                 185                 190

gca gct caa gac aca tta aaa aat gct gtt aaa gag ctt aca agt cct   624
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
        195                 200                 205

att gtc cat ggt aat aat tca ggg aaa gat ggg aat aca tct gca aat   672
Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn
    210                 215                 220

tct gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa   720
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
225                 230                 235                 240

aaa att aca gaa tct aac gca gtt gtt ctc gcc gtg aaa gaa gtt gaa   768
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu
                245                 250                 255

act ttg ctt aca tct ata gat gag ctt gct aaa gct att ggt aaa aaa   816
Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys
            260                 265                 270

ata aaa aac gat gtt agt tta gat aat gag gca gat cac aac gga tca   864
Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn Gly Ser
        275                 280                 285

tta ata tca gga gca tat tta att tca aac tta ata aca aaa aaa ata   912
Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys Lys Ile
    290                 295                 300

agt gca ata aaa gat tca gga gaa ttg aag gca gaa att gaa aag gct   960
Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu Lys Ala
305                 310                 315                 320

aag aaa tgt tct gaa gaa ttt act gct aaa tta aaa ggt gaa cac aca  1008
Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu His Thr
                325                 330                 335
```

```
gat ctt ggt aaa gaa ggc gtt act gat gat aat gca aaa aaa gcc att   1056
Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile
            340                 345                 350

tta aaa aca aat aat gat aaa act aag ggc gct gat gaa ctt gaa aag   1104
Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys
        355                 360                 365

tta ttt gaa tca gta aaa aac ttg tca aaa gca gct aaa gag atg ctt   1152
Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu Met Leu
    370                 375                 380

act aat tca gtt aaa gag ctt aca agc                              1179
Thr Asn Ser Val Lys Glu Leu Thr Ser
385                 390
```

<210> 72
<211> 393
<212> PRT
<213> ospC Chimera

<400> 72

```
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
65                  70                  75                  80
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
                85                  90                  95
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
            100                 105                 110
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
        115                 120                 125
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130                 135                 140
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
145                 150                 155                 160
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
                165                 170                 175
```

```
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
            180                 185                 190
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
        195                 200                 205
Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn
    210                 215                 220
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
225                 230                 235                 240
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu
                245                 250                 255
Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys
            260                 265                 270
Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn Gly Ser
        275                 280                 285
Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys Lys Ile
    290                 295                 300
Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu Lys Ala
305                 310                 315                 320
Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu His Thr
                325                 330                 335

Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile
            340                 345                 350
Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys
        355                 360                 365
Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu Met Leu
    370                 375                 380
Thr Asn Ser Val Lys Glu Leu Thr Ser
385                 390


<210> 73
<211> 1178
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1178)

<400> 73
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
```

```
gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca gga aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat gca tct gca aat tct gct gat gag tct gtt aaa ggg cct  144
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt  192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50                  55                  60

ctg gcc gtg aaa gaa gtt gag acc tta ctt gca tct ata gat gaa ctt  240
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
65                  70                  75                  80

gct acc aaa gct att ggt aaa aaa ata ggc aat aat ggt tta gag gcc  288
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
                85                  90                  95

aat cag agt aaa aac aca tca ttg tta tca gga gct tat gca ata tct  336
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
            100                 105                 110

gac cta ata gca gaa aaa tta aat gta ttg aaa aat gaa gaa tta aag  384
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
        115                 120                 125

gaa aag att gat aca gct aag caa tgt tct aca gaa ttt act aat aaa  432
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130                 135                 140

cta aaa agt gaa cat gca gtg ctt ggt ctg gac aat ctt act gat gat  480
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
145                 150                 155                 160

aat gca caa aga gct att tta aaa aaa cat gca aat aaa gat aag ggt  528
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
                165                 170                 175

gct gca gaa ctt gaa aag tta ttt aaa gcg gta gaa aac tta tca aaa  576
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
            180                 185                 190

gca gct caa gac aca tta aaa aat gct gtt aaa gag ctt aca agt cct  624
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
        195                 200                 205
```

```
att gtc cat ggt aat aat tca gga aaa gat ggg aat aca tct gca aat   672
Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn
    210                 215                 220

tct gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa   720
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
225                 230                 235                 240

aaa att aca gaa tct aac gca gtt gtt ctg gct gtg aaa gaa att gaa   768
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Ile Glu
                245                 250                 255

act ttg ctt gca tct ata gat gaa ctt gct act aaa gct att ggt aaa   816
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys
            260                 265                 270

aaa ata caa caa aat ggt ggt tta gct gtc gaa gcg ggg cat aat gga   864
Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His Asn Gly
        275                 280                 285

aca ttg tta gca ggt gct tat aca ata tca aaa cta ata aca caa aaa   912
Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr Gln Lys
    290                 295                 300

tta gat gga ttg aaa aat tca gaa aaa tta aag gaa aaa att gaa aat   960
Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile Glu Asn
305                 310                 315                 320

gct aag aaa tgt tct gaa gat ttt act aaa aaa cta gaa gga gaa cat  1008
Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His
                325                 330                 335

gcg caa ctt gga att gaa aat gtt act gat gag aat gca aaa aaa gct  1056
Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys Lys Ala
            340                 345                 350

att tta ata aca gat gca gct aaa gat aag ggc gct gca gag ctt gaa  1104
Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu Leu Glu
        355                 360                 365

aag cta ttt aaa gca gta gaa aac ttg gca aaa gca gct aaa gag atg  1152
Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys Glu Met
    370                 375                 380
```

```
ctt gct aat tca gtt aaa gag ctt ac                                    1178
Leu Ala Asn Ser Val Lys Glu Leu
385                 390
```

<210> 74
<211> 392
<212> PRT
<213> ospC Chimera

<400> 74

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
65                  70                  75                  80
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
                85                  90                  95
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
            100                 105                 110
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
        115                 120                 125
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130                 135                 140
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
145                 150                 155                 160
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
                165                 170                 175
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
            180                 185                 190
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
        195                 200                 205
Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn
    210                 215                 220
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
225                 230                 235                 240
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Ile Glu
                245                 250                 255
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys
            260                 265                 270
```

```
Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His Asn Gly
        275                 280                 285
Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr Gln Lys
    290                 295                 300
Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile Glu Asn
305                 310                 315                 320
Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His
                325                 330                 335
Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys Lys Ala
            340                 345                 350
Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu Leu Glu
        355                 360                 365
Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys Glu Met
    370                 375                 380
Leu Ala Asn Ser Val Lys Glu Leu
385                 390


<210> 75
<211> 1178
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1178)

<400> 75
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca gga aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat gca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50                  55                  60

ctg gcc gtg aaa gaa gtt gag acc tta ctt gca tct ata gat gaa ctt   240
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
65                  70                  75                  80
```

```
gct acc aaa gct att ggt aaa aaa ata ggc aat aat ggt tta gag gcc   288
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
                 85                  90                  95

aat cag agt aaa aac aca tca ttg tta tca gga gct tat gca ata tct   336
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
            100                 105                 110

gac cta ata gca gaa aaa tta aat gta ttg aaa aat gaa gaa tta aag   384
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
        115                 120                 125

gaa aag att gat aca gct aag caa tgt tct aca gaa ttt act aat aaa   432
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130                 135                 140

cta aaa agt gaa cat gca gtg ctt ggt ctg gac aat ctt act gat gat   480
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
145                 150                 155                 160

aat gca caa aga gct att tta aaa aaa cat gca aat aaa gat aag ggt   528
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
                165                 170                 175

gct gca gaa ctt gaa aag tta ttt aaa gcg gta gaa aac tta tca aaa   576
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
            180                 185                 190

gca gct caa gac aca tta aaa aat gct gtt aaa gag ctt aca agt cct   624
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
        195                 200                 205

att gtc cat ggt aat aat tca aga aaa gat ggg aat gca tct aca aat   672
Ile Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser Thr Asn
    210                 215                 220

tct gcc gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa   720
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
225                 230                 235                 240

aaa att aca gaa tct aac gca gtt gtt ctg gcc gtg aaa gaa gtt gag   768
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu
                245                 250                 255
```

```
acc tta ctt gca tct ata gat gaa ctt gct acc aaa gct att ggt aag   816
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys
            260                 265                 270

aaa ata ggc aat aat ggt tta gag gcc aat cag agt aaa aac aca tca   864
Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn Thr Ser
        275                 280                 285

ttg tta tca gga gct tat gca ata tct gac cta ata gca gaa aaa tta   912
Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu Lys Leu
    290                 295                 300

aat gta ttg aaa aat gaa gaa tta aag gaa aag att gat aca gct aag   960
Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr Ala Lys
305                 310                 315                 320

caa tgt tct aca gaa ttt act aat aaa cta aaa agt gaa cat gca gtg   1008
Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His Ala Val
                325                 330                 335

ctt ggt ctg gac aat ctt act gat gat aat gca caa aga gct att tta   1056
Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala Ile Leu
            340                 345                 350

aaa aaa cat gca aat aaa gat aag ggt gct gca gaa ctt gaa aag tta   1104
Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu
        355                 360                 365

ttt aaa gcg gta gaa aac tta tca aaa gca gct caa gac aca tta aaa   1152
Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr Leu Lys
    370                 375                 380

aat gct gtt aaa gag ctt aca agt cc                               1178
Asn Ala Val Lys Glu Leu Thr Ser
385                 390
```

<210> 76
<211> 392
<212> PRT
<213> ospC Chimera

<400> 76

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
```

```
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
65                  70                  75                  80

Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
                85                  90                  95
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
            100                 105                 110
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
        115                 120                 125
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130                 135                 140
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
145                 150                 155                 160
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
                165                 170                 175
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
            180                 185                 190
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
        195                 200                 205
Ile Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser Thr Asn
    210                 215                 220
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
225                 230                 235                 240
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu
                245                 250                 255
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys
            260                 265                 270
Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn Thr Ser
        275                 280                 285
Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu Lys Leu
    290                 295                 300
Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr Ala Lys
305                 310                 315                 320
Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His Ala Val
                325                 330                 335
Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala Ile Leu
            340                 345                 350
Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu
        355                 360                 365
Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr Leu Lys
    370                 375                 380
Asn Ala Val Lys Glu Leu Thr Ser
385                 390
```

<210> 77
<211> 1230
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1230)

<400> 77

```
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct  144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta  192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att  240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat  288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata  336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110

tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta  384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat  432
```

```
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140

aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat   480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160

gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa   528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175

ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca   576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190

aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc   624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205

cct gtt gtg gca gaa agt cca aaa aaa cct ttc cat ggt aat aat tca   672
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Phe His Gly Asn Asn Ser
    210                 215                 220

ggt ggg gat tct gca tct act aat cct gat gag tct gca aaa gga cct   720
Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly Pro
225                 230                 235                 240

aat ctt acc gta ata agc aaa aaa att aca gat tct aat gca ttt tta   768
Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe Leu
                245                 250                 255

ctg gct gtg aaa gaa gtt gag gct ttg ctt tca tct ata gat gaa ctt   816
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
            260                 265                 270

tct aaa gct att ggt aaa aaa ata aaa aat gat ggt act tta gat aac   864
Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp Asn
        275                 280                 285

gaa gca aat cga aac gaa tca ttg ata gca gga gct tat gaa ata tca   912
Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile Ser
    290                 295                 300

aaa cta ata aca caa aaa tta agt gta ttg aat tca gaa gaa tta aag   960
Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu Lys
305                 310                 315                 320
```

```
aaa aaa att aaa gag gct aag gat tgt tcc caa aaa ttt act act aag   1008
Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr Lys
                325                 330                 335

cta aaa gat agt cat gca gag ctt ggt ata caa agc gtt cag gat gat   1056
Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp Asp
            340                 345                 350

aat gca aaa aaa gct att tta aaa aca cat gga act aaa gac aag ggt   1104
Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp Lys Gly
        355                 360                 365

gct aaa gaa ctt gaa gag tta ttt aaa tca cta gaa agc ttg tca aaa   1152
Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu Ser Lys
    370                 375                 380

gca gcg caa gca gca tta act aat tca gtt aaa gag ctt aca aat cct   1200
Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr Asn Pro
385                 390                 395                 400

gtt gtg gca gaa agt cca aaa aaa cct taa                          1230
Val Val Ala Glu Ser Pro Lys Lys Pro  *
                405
```

<210> 78
<211> 409
<212> PRT
<213> ospC Chimera

<400> 78

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125
```

```
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140

Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Phe His Gly Asn Asn Ser
    210                 215                 220
Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly Pro
225                 230                 235                 240
Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe Leu
                245                 250                 255
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
            260                 265                 270
Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp Asn
        275                 280                 285
Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile Ser
    290                 295                 300
Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu Lys
305                 310                 315                 320
Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr Lys
                325                 330                 335
Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp Asp
            340                 345                 350
Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp Lys Gly
        355                 360                 365
Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu Ser Lys
    370                 375                 380
Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr Asn Pro
385                 390                 395                 400
Val Val Ala Glu Ser Pro Lys Lys Pro
                405
```

<210> 79
<211> 1209
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1209)

<400> 79

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atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat   288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata   336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110

tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta   384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat   432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140

aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat   480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160

gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa   528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175

ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca   576
```

```
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190

aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc   624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205

cct gtt gtg gca gaa agt cca aaa aaa cct tcc atg gta aat aat tca   672
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser
    210                 215                 220

ggg aaa gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa   720
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys
225                 230                 235                 240

ggg cct aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca   768
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala
                245                 250                 255

gtt gtt ctc gcc gtg aaa gaa gtt gaa act ttg ctt aca tct ata gat   816
Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp
            260                 265                 270

gag ctt gct aaa gct att ggt aaa aaa ata aaa aac gat gtt agt tta   864
Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu
        275                 280                 285

gat aat gag gca gat cac aac gga tca tta ata tca gga gca tat tta   912
Asp Asn Glu Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu
    290                 295                 300

att tca aac tta ata aca aaa aaa ata agt gca ata aaa gat tca gga   960
Ile Ser Asn Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly
305                 310                 315                 320

gaa ttg aag gca gaa att gaa aag gct aag aaa tgt tct gaa gaa ttt  1008
Glu Leu Lys Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe
                325                 330                 335

act gct aaa tta aaa ggt gaa cac aca gat ctt ggt aaa gaa ggc gtt  1056
Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val
            340                 345                 350

act gat gat aat gca aaa aaa gcc att tta aaa aca aat aat gat aaa  1104
Thr Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys
        355                 360                 365
```

```
act aag ggc gct gat gaa ctt gaa aag tta ttt gaa tca gta aaa aac   1152
Thr Lys Gly Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn
    370                 375                 380

ttg tca aaa gca gct aaa gag atg ctt act aat tca gtt aaa gag ctt   1200
Leu Ser Lys Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu
385                 390                 395                 400

aca agc taa                                                      1209
Thr Ser  *
```

<210> 80
<211> 402
<212> PRT
<213> ospC Chimera

<400> 80

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser
    210                 215                 220
```

```
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys
225                 230                 235                 240
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala
                245                 250                 255
Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp
            260                 265                 270
Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu
        275                 280                 285
Asp Asn Glu Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu
    290                 295                 300
Ile Ser Asn Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly
305                 310                 315                 320
Glu Leu Lys Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe
                325                 330                 335
Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val
            340                 345                 350
Thr Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys
        355                 360                 365
Thr Lys Gly Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn
    370                 375                 380
Leu Ser Lys Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu
385                 390                 395                 400
Thr Ser
```

<210> 81
<211> 1205
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1205)

<400> 81

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atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct   144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
```

```
aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta   192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
     50                  55                  60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att   240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
 65                  70                  75                  80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat   288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                 85                  90                  95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata   336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110
tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta   384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat   432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140

aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat   480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160

gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa   528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175

ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca   576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190

aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc   624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205

cct gtt gtg gca gaa agt cca aaa aaa cct tcc atg gta aat aat tca   672
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser
    210                 215                 220

gga aaa gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa   720
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys
225                 230                 235                 240
```

```
ggg cct aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca   768
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala
                245                 250                 255

gtt gtt ctg gct gtg aaa gaa att gaa act ttg ctt gca tct ata gat   816
Val Val Leu Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp
            260                 265                 270

gaa ctt gct act aaa gct att ggt aaa aaa ata caa caa aat ggt ggt   864
Glu Leu Ala Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly
        275                 280                 285

tta gct gtc gaa gcg ggg cat aat gga aca ttg tta gca ggt gct tat   912
Leu Ala Val Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr
    290                 295                 300

aca ata tca aaa cta ata aca caa aaa tta gat gga ttg aaa aat tca   960
Thr Ile Ser Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser
305                 310                 315                 320

gaa aaa tta aag gaa aaa att gaa aat gct aag aaa tgt tct gaa gat  1008
Glu Lys Leu Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp
                325                 330                 335

ttt act aaa aaa cta gaa gga gaa cat gcg caa ctt gga att gaa aat  1056
Phe Thr Lys Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn
            340                 345                 350


gtt act gat gag aat gca aaa aaa gct att tta ata aca gat gca gct  1104
Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala
        355                 360                 365

aaa gat aag ggc gct gca gag ctt gaa aag cta ttt aaa gca gta gaa  1152
Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu
    370                 375                 380

aac ttg gca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag  1200
Asn Leu Ala Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu
385                 390                 395                 400

ctt ac                                                          1205
Leu
```

<210> 82
<211> 401
<212> PRT
<213> ospC Chimera

<400> 82

```
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
            20                  25                  30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
        35                  40                  45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
    50                  55                  60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
65                  70                  75                  80
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
                85                  90                  95
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
            100                 105                 110
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
        115                 120                 125
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
    130                 135                 140
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                 150                 155                 160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
                165                 170                 175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
            180                 185                 190
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
        195                 200                 205
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser
    210                 215                 220
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys
225                 230                 235                 240
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala
                245                 250                 255
Val Val Leu Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp
            260                 265                 270
Glu Leu Ala Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly
        275                 280                 285
Leu Ala Val Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr
    290                 295                 300
Thr Ile Ser Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser
305                 310                 315                 320
```

```
Glu Lys Leu Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp
                325                 330                 335
Phe Thr Lys Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn
            340                 345                 350
Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala
        355                 360                 365
Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu
    370                 375                 380
Asn Leu Ala Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu
385                 390                 395                 400
Leu
```

<210> 83
<211> 1236
<212> DNA
<213> ospC Chimera

<220>
<221> CDS
<222> (1)...(1236)

<400> 83

```
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15

gca caa aaa ggt gct gag tca att gga tcc tgt agt aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Ser Asn Ser Gly Lys
            20                  25                  30

ggt ggg gat tct gca tct act aat cct gct gac gag tct gcg aaa ggg   144
Gly Gly Asp Ser Ala Ser Thr Asn Pro Ala Asp Glu Ser Ala Lys Gly
        35                  40                  45

cct aat ctt aca gaa ata agc aaa aaa att aca gat tct aat gca ttt   192
Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe
    50                  55                  60

gta ctt gct gtt aaa gaa gtt gag act ttg gtt tta tct ata gat gaa   240
Val Leu Ala Val Lys Glu Val Glu Thr Leu Val Leu Ser Ile Asp Glu
65                  70                  75                  80

ctt gct aag aaa gct att ggt caa aaa ata gac aat aat aat ggt tta   288
Leu Ala Lys Lys Ala Ile Gly Gln Lys Ile Asp Asn Asn Asn Gly Leu
                85                  90                  95
```

```
gct gct tta aat aat cag aat gga tcg ttg tta gca gga gcc tat gca   336
Ala Ala Leu Asn Asn Gln Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala
            100                 105                 110

ata tca acc cta ata aca gaa aaa ttg agt aaa ttg aaa aat tta gaa   384
Ile Ser Thr Leu Ile Thr Glu Lys Leu Ser Lys Leu Lys Asn Leu Glu
        115                 120                 125

gaa tta aag aca gaa att gca aag gct aag aaa tgt tcc gaa gaa ttt   432
Glu Leu Lys Thr Glu Ile Ala Lys Ala Lys Lys Cys Ser Glu Glu Phe
    130                 135                 140

act aat aaa cta aaa agt ggt cat gca gat ctt ggc aaa cag gat gct   480
Thr Asn Lys Leu Lys Ser Gly His Ala Asp Leu Gly Lys Gln Asp Ala
145                 150                 155                 160

acc gat gat cat gca aaa gca gct att tta aaa aca cat gca act acc   528
Thr Asp Asp His Ala Lys Ala Ala Ile Leu Lys Thr His Ala Thr Thr
                165                 170                 175

gat aaa ggt gct aaa gaa ttt aaa gat tta ttt gaa tca gta gaa ggt   576
Asp Lys Gly Ala Lys Glu Phe Lys Asp Leu Phe Glu Ser Val Glu Gly
            180                 185                 190

ttg tta aaa gca gct caa gta gca cta act aat tca gtt aaa gaa ctt   624
Leu Leu Lys Ala Ala Gln Val Ala Leu Thr Asn Ser Val Lys Glu Leu
        195                 200                 205

aca agt cct gtt gta gca gaa agt cca aaa aaa cct cat atg gct aat   672
Thr Ser Pro Val Val Ala Glu Ser Pro Lys Lys Pro His Met Ala Asn
    210                 215                 220

aat tca ggt ggg gat tct gca tct act aat cct gat gag tct gca aaa   720
Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys
225                 230                 235                 240

gga cct aat ctt acc gta ata agc aaa aaa att aca gat tct aat gca   768
Gly Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala
                245                 250                 255

ttt tta ctg gct gtg aaa gaa gtt gag gct ttg ctt tca tct ata gat   816
Phe Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp
            260                 265                 270

gaa ctt tct aaa gct att ggt aaa aaa ata aaa aat gat ggt act tta   864
Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu
        275                 280                 285
```

```
gat aac gaa gca aat cga aac gaa tca ttg ata gca gga gct tat gaa   912
Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu
    290                 295                 300

ata tca aaa cta ata aca caa aaa tta agt gta ttg aat tca gaa gaa   960
Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu
305                 310                 315                 320

tta aag aaa aaa att aaa gag gct aag gat tgt tcc caa aaa ttt act  1008
Leu Lys Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr
                325                 330                 335

act aag cta aaa gat agt cat gca gag ctt ggt ata caa agc gtt cag  1056
Thr Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln
            340                 345                 350

gat gat aat gca aaa aaa gct att tta aaa aca cat gga act aaa gac  1104
Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp
        355                 360                 365

aag ggt gct aaa gaa ctt gaa gag tta ttt aaa tca cta gaa agc ttg  1152
Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu
    370                 375                 380

tca aaa gca gcg caa gca gca tta act aat tca gtt aaa gag ctt aca  1200
Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr
385                 390                 395                 400

aat cct gtt gtg gca gaa agt cca aaa aaa cct taa                 1236
Asn Pro Val Val Ala Glu Ser Pro Lys Lys Pro  *
                405                 410
```

<210> 84
<211> 411
<212> PRT
<213> ospC Chimera

<400> 84

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1               5                  10                  15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Ser Asn Ser Gly Lys
            20                  25                  30
Gly Gly Asp Ser Ala Ser Thr Asn Pro Ala Asp Glu Ser Ala Lys Gly
        35                  40                  45
```

```
Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe
    50                  55                  60
Val Leu Ala Val Lys Glu Val Glu Thr Leu Val Leu Ser Ile Asp Glu
65                  70                  75                  80
Leu Ala Lys Lys Ala Ile Gly Gln Lys Ile Asp Asn Asn Asn Gly Leu
                85                  90                  95
Ala Ala Leu Asn Asn Gln Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala
            100                 105                 110
Ile Ser Thr Leu Ile Thr Glu Lys Leu Ser Lys Leu Lys Asn Leu Glu
        115                 120                 125
Glu Leu Lys Thr Glu Ile Ala Lys Ala Lys Lys Cys Ser Glu Glu Phe
    130                 135                 140
Thr Asn Lys Leu Lys Ser Gly His Ala Asp Leu Gly Lys Gln Asp Ala
145                 150                 155                 160
Thr Asp Asp His Ala Lys Ala Ala Ile Leu Lys Thr His Ala Thr Thr
                165                 170                 175
Asp Lys Gly Ala Lys Glu Phe Lys Asp Leu Phe Glu Ser Val Glu Gly
            180                 185                 190
Leu Leu Lys Ala Ala Gln Val Ala Leu Thr Asn Ser Val Lys Glu Leu
        195                 200                 205
Thr Ser Pro Val Val Ala Glu Ser Pro Lys Lys Pro His Met Ala Asn
    210                 215                 220
Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys
225                 230                 235                 240
Gly Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala
                245                 250                 255
Phe Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp
            260                 265                 270
Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu
        275                 280                 285
Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu
    290                 295                 300
Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu
305                 310                 315                 320
Leu Lys Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr
                325                 330                 335
Thr Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln
            340                 345                 350
Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp
        355                 360                 365
Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu
    370                 375                 380
Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr
385                 390                 395                 400

Asn Pro Val Val Ala Glu Ser Pro Lys Lys Pro
                405                 410
```

<210> 85
<211> 192
<212> PRT
<213> borrelia burgdorferi

<400> 85
Cys Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp
1 5 10 15
Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr
20 25 30
Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu
35 40 45
Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn
50 55 60
Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn Gly Ser Leu Ile Ser
65 70 75 80
Gly Ala Tyr Leu Ile Ser Thr Leu Ile Thr Lys Lys Ile Ser Ala Ile
85 90 95
Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu Lys Ala Lys Lys Cys
100 105 110
Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly
115 120 125
Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr
130 135 140
Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys Leu Phe Glu
145 150 155 160
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Gly Gly Leu Ala Val Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly
65                  70                  75                  80
Ala Tyr Thr Ile Ser Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys
                85                  90                  95
Asn Ser Glu Lys Leu Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser
            100                 105                 110
Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile
        115                 120                 125
Glu Asn Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp
    130                 135                 140
Ala Ala Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala
145                 150                 155                 160
Val Glu Asn Leu Ala Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val
                165                 170                 175
Lys Glu Leu Thr Ser Pro Ile Val Ala Glu Ser Pro Lys Lys Pro
            180                 185                 190
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